**DIVISION 09 – FINISHES**

**SECTION 09 65 19.33 – RUBBER TILE FLOORING**

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BEGINNING OF SECTION 09 65 19.33

**PART 1 – GENERAL**

1. SUMMARY
	1. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications. Section includes: Resilient Rubber Tile Flooring and accessories.
2. DESCRIPTION OF WORK
	1. **Work Included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
		1. Section 09 65 19 Resilient Flooring
		2. Section 09 65 19.33 Rubber Tile Flooring
		3. Section 09 01 60 Maintenance of Flooring
	2. **Related Work:** The following items are not included in this Section and are specified under the designated Sections:
		1. Section 03 30 00 Cast-In-Place Concrete, Substrate Preparation
		2. Section 06 10 00 Rough Carpentry, Substrate Preparation
	3. **References (Industry Standards):**
		1. ASTM International (ASTM):
			1. ASTM F1344, Standard Specification for Rubber Tile Flooring
			2. ASTM E648, Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
			3. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
			4. CAN/ULC-S102.2, Test Method for Surface Burning
			5. ASTM D2240 , Standard Test Method for Rubber Property—Durometer Hardness
			6. ASTM F970, Standard Test Method for Static Load Limit
			7. ASTM F970 (Modified), Test Method for Max Weight
			8. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring
			9. ASTM D2047, Standard Test Method for Static Coefficient of Friction as Measured by the James Machine
			10. ASTM F1514, Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
			11. ASTM D3389, Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)
			12. ASTM F2199, Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile After Exposure to Heat
			13. ASTM G21, Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
			14. ASTM E492/E989, Standard Test Method for Measurement of Impact Sound Transmission
			15. ASTM E90 / E413, Classification for Rating Sound Insulation
			16. ASTM E2179, Standard Test Method for Measurement of the Effectiveness of Floor Covering in Reducing Impact Sound Transmission
			17. ASTM F710, Standard Practice for Preparing Concrete to Receive Resilient Flooring
			18. ASTM F1482, Standard Guide to Wood Underlayments products Available for Use Under Resilient Flooring
		2. **National Fire Protection Association (NFPA):**
			1. NFPA 253, Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
			2. NFPA 258, Test Method for Specific Density of Smoke Generated by Solid Materials
3. SUBMITTALS
	1. **General:** Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
	2. **Product Data:** Submit manufacturer's installation instructions and technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed for use.
	3. **Samples:** Submit representative samples of each product specified for verification, in manufacturer’s standard size samples of each resilient product color, texture and patter required.
4. QUALITY ASSURANCE
	1. **Manufacturer Qualifications:** Provide resilient rubber tile flooring and accessory materials manufactured in the United States of America by a firm with a minimum of 10 years’ experience with resilient flooring materials of type equivalent to those specified.
		1. Provide resilient flooring tread products, including risers, stringers, and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
		2. Manufacturer shall be capable of providing technical training and technical field service representation.
	2. **Installer Qualifications:** Installer must be professional, licensed, insured and acceptable to manufacturer of resilient stair tread materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project.
	3. **Sustainable Design Requirements:**
		1. Rubber Tile must be easily cleaned and does not require coatings and strippers, or use chemicals that may be hazardous to human health.
		2. Rubber Tile must have a published EPD.
		3. Rubber Tile must have a published HPD.
		4. Rubber Tile must have is 100% Recyclable.
		5. Rubber Tile must have be SCS FloorScore® Certified and meets California Specifications Section 01350.
		6. Rubber Tile must be free of materials known to be teratogenic, mutagenic or carcinogenic including halogens, asbestos and chlorines.
5. DELIVERY, STORAGE, AND HANDLING
	1. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
	2. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48-hours prior to installation.
6. PROJECT CONDITIONS
	1. Install Rubber Tile after other finishing operations, including painting, have been completed.
	2. Maintain temperature at service levels and/or the ambient temperature must remain steady (± 10° F) between 65° F and 85° F for at least 48-hours prior to, during and until substantial completion.
	3. Maintain relative humidity at service levels, or between 40% and 65% RH.
	4. Avoid conditions in which dew point causes condensation on the installation surface.
7. WARRANTY
	1. Provide manufacturer’s standard limited commercial warranty to cover manufacturing defects.

**PART 2 - PRODUCTS**

*Note To specifier: remove and / or amend sections as necessary.*

1. MANUFACTURER
	1. Basis-of-Design: Roppe Corporation | 1602 N Union St. | Fostoria, OH 44830 | P: (800) 537-9527
	2. Substitutions: No substitutions permitted
2. **PRODUCTS**
	1. HOMOGENEOUS RESILIENT RUBBER TILE FLOORING
		1. Roppe ‘RAISED DESIGN’ RUBBER TILE
		2. Specify Profile by Dimension - Thickness (nominal thickness shall conform to industry standards and shall contain no asbestos fiber): *(thickness is listed on website:* [*www.roppe.com*](http://www.roppe.com) *and in the Roppe Product Catalog):* Raised Design Rubber Tile Flooring will have a thickness of 1/8”
		3. Specify Profile by number and description: *(profiles are listed on website:* [*www.roppe.com*](http://www.roppe.com) *and in the Roppe Product Catalog): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
		4. Specify Profile by Dimension – Size is 19 11/16” X 19 11/16” tile. Material shall conform to all standards and shall contain no asbestos fiber) (*size, style number, as well as texture description are all listed on website:* [*www.roppe.com*](http://www.roppe.com) *and in the Roppe Product Catalog): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
		5. Specify Color by number and color name: *(colors are listed on website:* [*www.roppe.com*](http://www.roppe.com) *and in the Roppe Product Catalog): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
			1. Roppe Raised Design rubber tiles risers and stringers are solid, homogeneous, vulcanized rubber.
			2. ASTM F1344 – Rubber Floor Tile: **Class I, Type A & B, Grade 1**
			3. ASTM E648 (NFPA 253) - Critical Radiant Flux: **Class I, > 0.45 W/cm2**
			4. ASTM E662 (NFPA 258) - Smoke Density: **Passes, < 450**
			5. CAN/ULC-S102.2 - Surface Burning: **Flame Spread Rating (FSR) 115, Smoke Developed Classification (SDC) 275**
			6. ASTM D2240 - Shore A Hardness: **> 85**
			7. ASTM F970 - Static Load Limit: **Passes, 250 PSI**
			8. ASTM F970 (Modified) - Max Weight: **1100 PSI**
			9. ASTM F925 – Chemical Resistance: **Passes**
			10. ASTM D2047 – Slip Resistance: **> 0.6**
			11. ASTM F1514 - Heat Color Stability: **Passes, ΔE < 8**
			12. ASTM D3389 - Abrasion Resistance: **Passes, < 1 g loss *(1000 cycles)***
			13. ASTM F2199 - Dimensional Stability: **Passes, < 0.15% *(MD & AMD)***
			14. ASTM G21 - Resistance to Fungi: **Excellent**
			15. ASTM E492/E989 – Impact Sound: **IIC 51**
			16. ASTM E90 / E413 – Airborne Sound: **STC 63**
			17. ASTM E2179 – Effectiveness of Floor: **ΔIIC 9**
3. **INSTALLATION AND MAINTENANCE MATERIALS**
	1. **Moisture Mitigation:** Moisture testing is required for all Envire Rubber Sheet & Tile installations. Mitigation should be performed if results indicate high levels of moisture. Recommended Moisture Mitigation Product:
		1. Excelsior MM-100, Moisture Mitigation provided by Roppe
			1. Unit Size: 2.5 Gallons
			2. Coverage: 1000 square feet per unit with one coat
			3. MM-100 is a water, solvent and VOC free, polyurethane-based moisture mitigation product used to treat concrete slabs with excessive moisture levels beyond what flooring adhesives allow.
			4. MM-100 can block moisture up to 20 lbs. MVER or 99% RH.
			5. MM-100 is a single component product, eliminating extensive mix times and concerns regarding pot life.
			6. MM-100 does not require aggressive concrete preparation.
			7. MM-100 is not recommended as a moisture mitigation system over a non-porous substrate. The substrate must be porous as per ASTM F3191 with 90% of the original substrate exposed.
			8. MM-100 is a two coat system that is incredibly easy to apply and does not require any specialized equipment, its excellent coverage rates also make it incredibly cost effective.
			9. Despite being a two coat system, MM-100 is incredibly fast drying.
			10. Flooring or subsequent coatings can be installed in less than two hours.
			11. Backed by a 10 year material and labor warranty, MM-100 is a fast and easy solution for the moisture issues that commonly plague flooring installations.
	2. **Substrate Preparation Products:** Substrates should be prepared to properly receive the resilient flooring products being specified. Trowelable leveling and patching compounds that are latex-modified, Portland cement based or blended hydraulic cement based formulation. Recommended Substrate Preparation Products:
		1. Excelsior NP-230, Non-Porous Substrate Primer provided by Roppe
			1. Unit Size: 2.5 Gallons
			2. Coverage: 1000 Square Feet per unit with one coat
			3. Used over MM-100 to promote adhesion of cementitious materials
			4. Single component and fast drying to allow for quick and easy installation
			5. Contains an aggregate to provide mechanical bond for cementitious materials
		2. Excelsior CP-300, Cementitious Patch provided by Roppe
			1. Unit Size: 10 lb. Pail
			2. Coverage: 33 Square Feet per unit @ 1/8”
			3. Doesn’t require primer over porous substrates
			4. Install flooring in as little as 30 minutes
		3. Excelsior SU-310, Self-Leveling Underlayment provided by Roppe
			1. Unit Size: 50 lb. Bag
			2. 5500 PSI Compressive Strength after 28 days
			3. Install flooring within 12 hours
			4. Pumpable
	3. **Adhesives:** Adhesives should be selected based on the site conditions and use of the space being installed. Recommended Adhesive Products:
		1. Excelsior SP-500, Acrylic Aerosol Pressure Sensitive Spray Adhesive provided by Roppe
			1. Unit Size: 22 Ounces
			2. Coverage: 100 Square Feet per 22 Ounce Can
			3. Should only be used if Heat Welding finished seams
			4. Standard installations over porous and non-porous substrates
			5. Excellent sheer strength
			6. Approved for Hill-Rom Beds
			7. Approved for Immediate Use
			8. Installation Limits
				1. 90% RH, ASTM F2170
				2. 8 lbs. MVER, ASTM F1869
				3. 7-10 pH
		2. Excelsior AP-520, Acrylic Roll-On/Trowelable Pressure Sensitive Adhesive provided by Roppe
			1. Unit Size: 3 Gallons
			2. Coverage: 1200 Square Feet per Unit
			3. Should only be used if Heat Welding finished seams
			4. Standard installations over porous and non-porous substrates
			5. Excellent sheer strength
			6. Approved for Hill-Rom Beds
			7. Approved for Immediate Use
			8. Installation Limits
				1. 90% RH, ASTM F2170
				2. 6 lbs. MVER, ASTM F1869
				3. 7.9 pH
		3. Excelsior AW-510, Acrylic Wet-Set Adhesive provided by Roppe
			1. Unit Size: 1 Gallon & 4 Gallon
			2. Coverage: 150 Square Feet
			3. Standard installations over porous and non-porous substrates
			4. Hard set adhesive adding to dimensionally stable materials
			5. Excellent sheer strength
			6. Approved for Hill-Rom Beds
			7. Installation Limits
				1. 90% RH, ASTM F2170
				2. 6 lbs. MVER, ASTM F1869
				3. 7-10 pH
		4. Excelsior MS-700, Modified Silane Wet-Set Adhesive provided by Roppe
			1. Unit Size: 3 Gallon
			2. Coverage: 480-705 Square Feet per unit
			3. Standard installations over porous and non-porous substrates
			4. Excellent green grab
			5. Hard set adhesive adding to dimensionally stable materials
			6. Excellent sheer strength
			7. Approved for Hill-Rom Beds
			8. Superior bond strength
			9. Great for environments with topical moisture
			10. Great for exterior applications
			11. Installation Limits, Indoor Installations only
				1. 95% RH, ASTM F2170
				2. 10 lbs. MVER, ASTM F1869
		5. Excelsior EW-710, Epoxy Wet-Set Adhesive provided by Roppe
			1. Unit Size: 1 Gallon
			2. Coverage: 150 Square Feet per unit
			3. Standard installations over porous and non-porous substrates
			4. Excellent green grab
			5. Hard set adhesive adding to dimensionally stable materials
			6. Excellent sheer strength
			7. Approved for Hill-Rom Beds
			8. Superior bond strength
			9. Great for environments with topical moisture
			10. Great for exterior applications
			11. Installation Limits, Indoor Installations only
				1. 90% RH, ASTM F2170
				2. 6 lbs. MVER, ASTM F1869
				3. 7-10 pH
	4. **Maintenance Materials:** Proper maintenance of the installation is critical to the long term performance of the flooring products being specified. Using the appropriate chemicals to maintain the product according to the environment in which it is specified is critical. Recommend maintenance products:
		1. Excelsior NC-900, All-Purpose Neutral pH Cleaner provided by Roppe
			1. For initial maintenance.
			2. For daily and routine maintenance.
		2. Excelsior CM-910, Cleaner/Maintainer provided by Roppe
			1. For daily or long-term maintenance.
			2. Has a slight polymer to restore the luster of the product while providing cleaning efficacy.
		3. Excelsior PF-960, High Performance Floor Finish for ease of floor maintenance, provided by Roppe.
			1. Creates a protective wear layer that protects flooring and eases maintenance.
		4. Excelsior PR-930, High Performance Finish Remover, provided by Roppe.

**PART 3 – EXECUTION**

1. GENERAL
	1. **General Contractor Responsibilities:**
		1. Supply a safe, climate controlled building and subfloor as detailed in Roppe Installation Instructions and Technical Data documents.
		2. Ensure substrate meets the requirements of ASTM F2169, Roppe Installation Instructions and Technical Data documents and Excelsior Installation Instructions and Technical Data documents.
		3. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer’s instructions.
		4. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring per the manufacturer’s instructions.
		5. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
		6. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
		7. Conduct initial maintenance prior to final usage per the Roppe Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.
	2. **Flooring Contractor Responsibilities**:
		1. Provide trained installers that are professional, licensed, insured and familiar with the resilient flooring material to be installed.
		2. Ensure installers or installation teams meet one of the following requirements:
			* 1. Have completed INSTALL (International Standards & Training Alliance) or CFI (Certified Floorcovering Installers) training programs and/or are certified by INSTALL or CFI.
				2. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified.
				3. CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association).
				4. CIM (Certified Installation Manager).
		3. Follow all requirements in the appropriate ***Roppe*** and/or Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.
2. EXAMINATION
	1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.
	2. **Verification of Conditions:** Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound. Confirm all areas are properly sealed and acclimated per manufacturer’s requirements.
	3. **Verification of Products:** In accordance with manufacturer’s installation requirements, visually inspect material for size, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.
3. SUBSTRATE PREPARATION
	1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and preparation. All work required ensuring substrate or subfloor meets manufacturers’ guidelines are the responsibility of the general contractor.
		1. Ensure surface is troweled flush with surface of concrete.
		2. Follow material manufacturer’s as well as adhesive manufacturer’s instructions for installation.
	2. **Preparation**: Ensure substrate meets the requirements of ASTM F710 for concrete substrates and ASTM F1482 for wood substrates and/or Roppe Technical Data Sheets and Excelsior Technical Data Sheets.
		1. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.
		2. Acclimate all products to be used during the installation and the installation environment prior to installation according to the manufacturers written instructions.
	3. **Concrete Substrates:**
		1. **Moisture Testing:** Perform moisture testing per the manufacturer’s recommendations to determine conditions, it is recommended to treat new and existing slabs a little bit different to ensure adequate conditions exist for installation.
			1. New concrete substrates: it is recommended to perform ASTM F2170 Relative Humidity testing no more than a week prior to installation to determine the levels present and when to proceed with the installation.
			2. Existing concrete substrates: in addition to ASTM F2170 testing, existing slabs that have previously had floor covering installed, must be tested to ASTM F1869 Calcium Chloride test kits to determine the MVER of the concrete.
		2. Mechanically remove contamination on the substrate that may cause damage to the flooring material, this includes paint, permanent and non-permanent markers, pens, crayons, etc. Leaving these on the substrate or marking with them on the back of the material could cause bleed through and damage the flooring.
		3. Fill cracks, holes, depressions and irregularities in the substrate to prevent transferring through to the surface of the resilient flooring. Use a high-quality Portland cement based product such as Excelsior installation products provided by Roppe.
	4. **Wood Substrates:** wood substrates must have a minimum 18” (45.7 cm) of cross ventilated space beneath the joist.
		1. Wood substrates must be a minimum 1” thick with a double layer construction.
		2. Wood substrates must be rigid and free of movement.
		3. Wood substrates must not be OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.
4. INSTALLATION
	1. **General**: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer’s technical data sheets.
	2. **Resilient Rubber Tiles:** Install material in accordance with manufacturer’s recommendations.
		1. Select the appropriate adhesive for the application and job site conditions
		2. Install material according to roll sequence or with like run numbers
		3. Install material according to directional arrow on the back of the material and do not reverse sheets
		4. Ensure material is rolled appropriately into the adhesive using a 100 lb. three section roller
		5. Heat Weld seams if required by the area in which the material is being installed.
			1. **Heat Welding (Seamless Floors)**: Material shall be grooved to accept Roppe rubber weld bead. Roppe rubber 4mm (0.160”) weld bead shall be installed according to manufacturer’s recommended installation documents.
			2. Do not heat weld for 24 hours to allow adhesive to fully cure.
	3. **Interface with Other Work:** If caulking or sealing is required after installation, please contact the manufacturer for a suitable, color matching caulk.
5. CLEANING & MAINTENANCE
	1. **General**: Clean up installation area using dust mop or vacuum or wipe material to remove any dirt, dust or debris.
	2. **Initial Maintenance**: Conduct initial maintenance per the manufacturer’s recommended procedures stated in the Maintenance Documents. All documentation is available upon request or from the Roppe website. Excelsior Cleaning products and floor finishes are the recommended products for use. All can be found linked to the product on the Roppe website or at [www.excelsiorproducts.net](http://www.excelsiorproducts.net).
	3. **Regular Maintenance**: Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the flooring and alter the dissipative properties of the tiles. The amount of maintenance depends directly upon the amount of dirt and particulates the floor is subjected to.
6. CLOSEOUT ACTIVITIES
	1. **General**: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities.
	2. **Protection**: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Be sure all construction debris is vacuumed up and / or removed prior to the protective material being installed and does not get trapped underneath. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect flooring from scuffing and tearing using temporary floor protection as well.

END OF SECTION 09 65 19.33